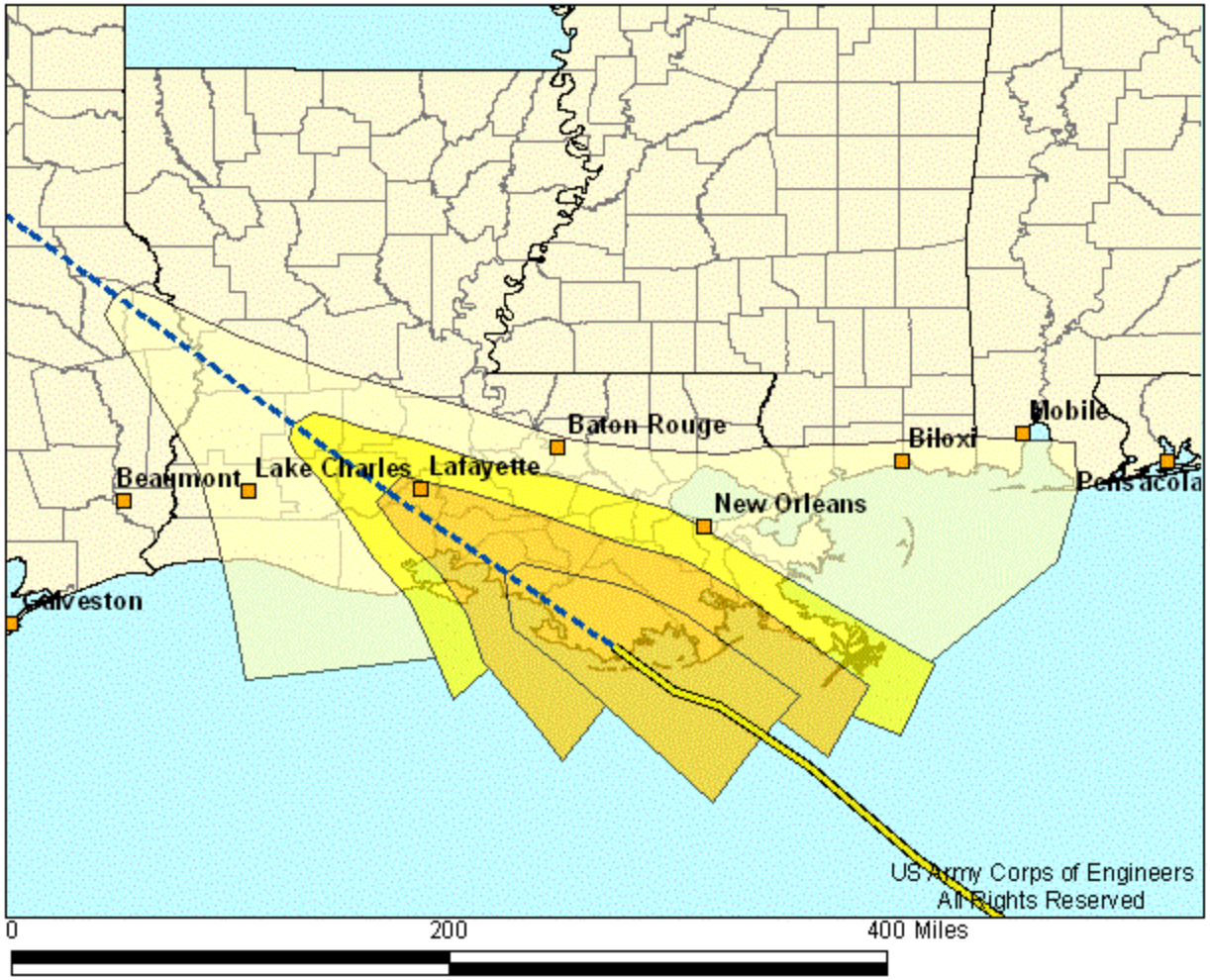
Hurricane Gustav Projected Damage Areas

Landfall Has Occurred

US Army Corps of Engineers

For Planning Purposes Only!



Post Landfall Projected Damage Areas

This model is based on a Category 2 storm making landfall south of Houma, LA.

Forecast Track
Historic Track

Projected Damage Areas

- CAT 0-type damage
- CAT 1-type damage
- CAT 2-type damage
- CAT 3-type damage
- CAT 4-type damage
- CAT 5-type damage

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

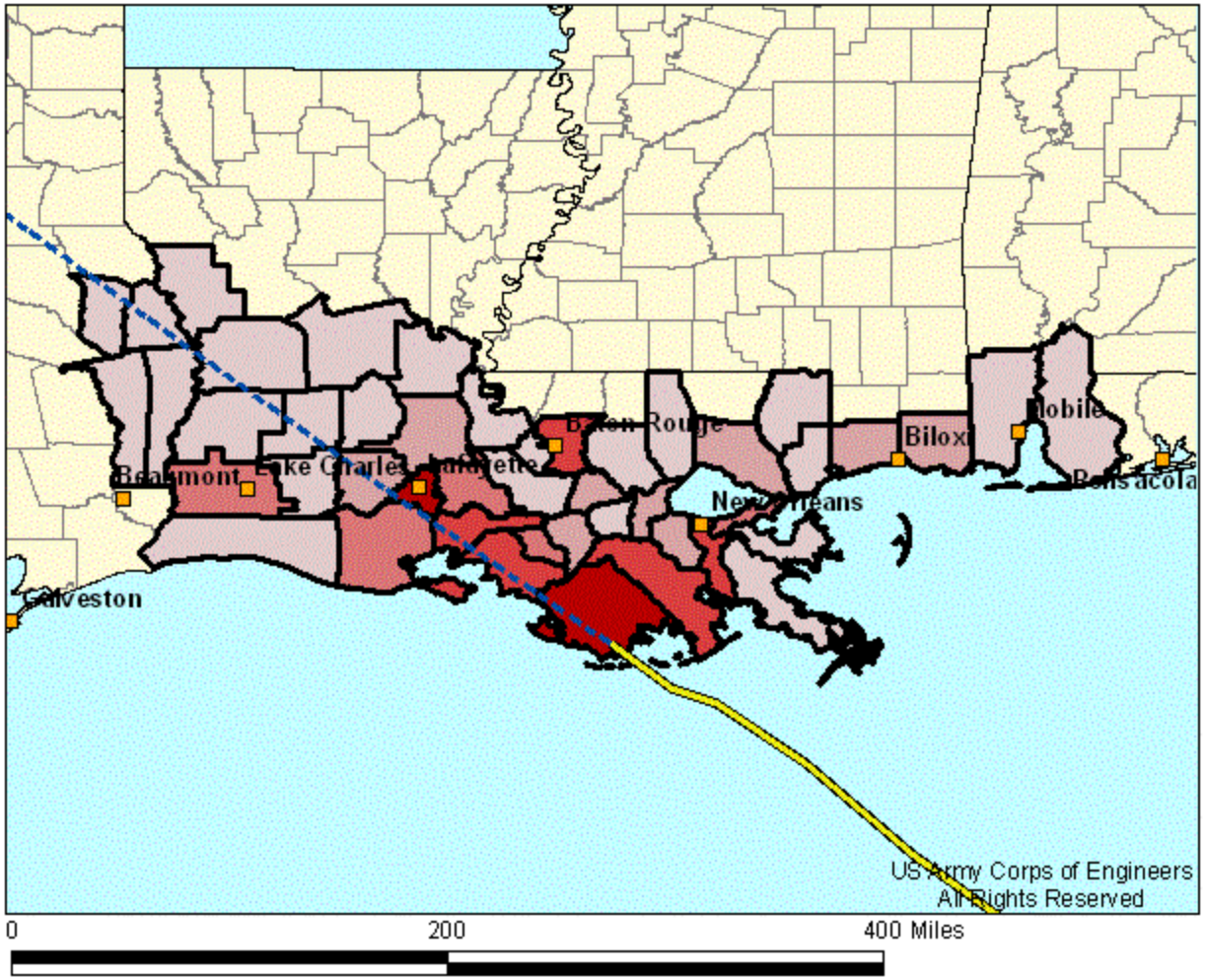
Hurricane Gustav Projected Damage Areas	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 1 of 20

US Army Corps of Engineers

Hurricane Gustav Debris Model

Landfall Has Occurred

For Planning Purposes Only!



Post Landfall Debris Model Results

Louisiana - 10,154,000 Yards
Mississippi - 530,000 Yards
Alabama - 145,000 Yards
Texas - 49,000 Yards

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Forecast Track
Historic Track

Debris

- < 100,000 cubic yards
- 100,000 - 249,999 cubic yards
- 250,000 - 499,999 cubic yards
- 500,000 - 999,999 cubic yards
- >1,000,000 cubic yards

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast. The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Gustav Debris Model

Generated By:
Siemsen, LRL 1130 EDT 09/01/2008

Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Gustav Debris Model

Landfall Has Occurred

For Planning Purposes Only!

State	Yards per State	County	Yards per County
Alabama		Baldwin	78,000
		Mobile	67,000
Alabama	145,000		
Louisiana		Acadia	200,000
		Allen	56,000
		Ascension	149,000
		Assumption	171,000
		Avoyelles	3,000
		Beauregard	63,000
		Calcasieu	257,000
		Cameron	11,000
		East Baton Rouge	508,000
		Evangeline	61,000
		Iberia	625,000
		Iberville	70,000
		Jefferson	869,000
		Jefferson Davis	73,000
		Lafayette	1,649,000
		Lafourche	974,000
		Livingston	100,000
		Orleans	373,000
		Plaquemines	58,000
		Pointe Coupee	18,000
		Rapides	7,000
		Sabine	6,000
		St Bernard	30,000
		St Charles	122,000
		St James	45,000
		St John the Baptist	101,000
		St Landry	231,000

State	Yards per State	County	Yards per County
Louisiana		St Martin	285,000
(continued)		St Mary	769,000
		St Tammany	235,000
		Tangipahoa	48,000
		Terrebonne	1,392,000
		Vermilion	495,000
		Vernon	74,000
		West Baton Rouge	26,000
Louisiana	10,154,000		
Mississippi		Hancock	96,000
		Harrison	239,000
		Jackson	179,000
		Pearl River	16,000
Mississippi	530,000		
Texas		Jasper	3,000
		Newton	20,000
		Sabine	22,000
		San Augustine	4,000
Texas	49,000		

The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

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Hurricane Gustav Debris Model

Generated By:
Siemsen, LRL 1130 EDT 09/01/2008

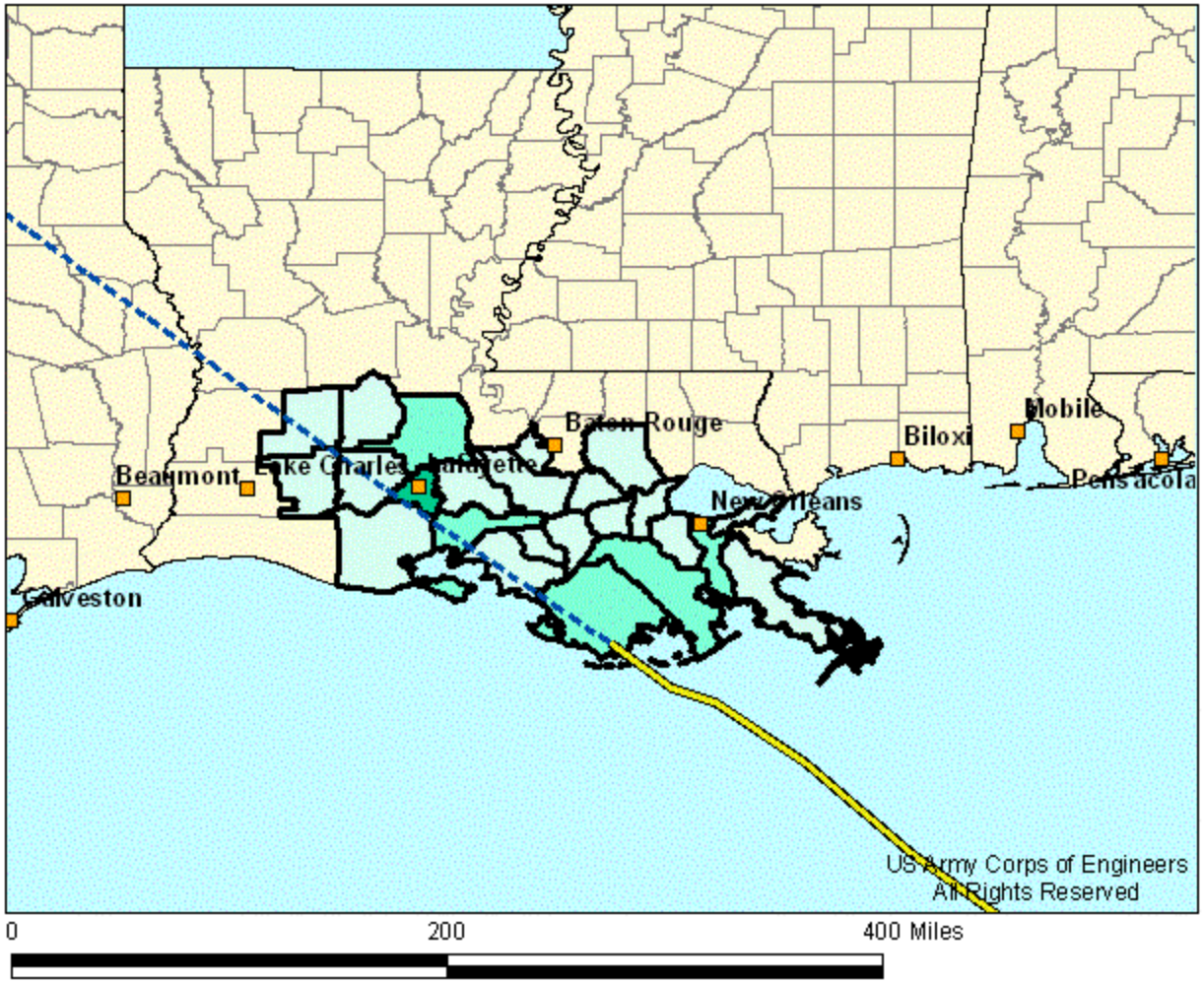
Sources:
HURREVAC
LRL-DEBRIS

Hurricane Gustav Commodities Model

Landfall Has Occurred

US Army Corps of Engineers

For Planning Purposes Only!



Post Landfall Water Model Results

Day One / Day Two / Day Three
Louisiana – 20/40/81 Truckloads

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Forecast Track
Historic Track

Commodities

- < 5 Trucks Each
- 5 - 10 Trucks Each
- 11 - 20 Trucks Each
- 21 - 40 Trucks Each
- > 40 Trucks Each

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC ***(1100 EDT 09/01/2008)*** forecast. The amount of commodities forecasted is based on Mission Guide Book requirements and SME input. The graphic represents single day needs with full distribution system in place and operating.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Gustav Commodities Model	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 4 of 20

US Army Corps of Engineers

Hurricane Gustav Commodities Model

Landfall Has Occurred

For Planning Purposes Only!

State	Truckloads per State	County	Truckloads per County
Louisiana		Acadia	4
		Allen	1
		Ascension	3
		Assumption	2
		Evangeline	1
		Iberia	5
		Iberville	2
		Jefferson	10
		Jefferson Davis	1
		Lafayette	12
		Lafourche	6
		Livingston	1
		Orleans	1
		Plaquemines	1
		St Charles	3
		St James	2
		St John the Baptist	3
		St Landry	5
		St Martin	3
		St Mary	3
		Terrebonne	7
		Vermilion	4
		West Baton Rouge	1
Louisiana	81		

The amount of commodities forecasted is based on Mission Guide Book requirements and SME input and the above table indicates suggested needs based on phased deployment of a commodities distribution system.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Source: US Army Corps of Engineers, All Rights Reserved

Hurricane Gustav Commodities Model

Generated By:
Siemsen, LRL 1130 EDT 09/01/2008

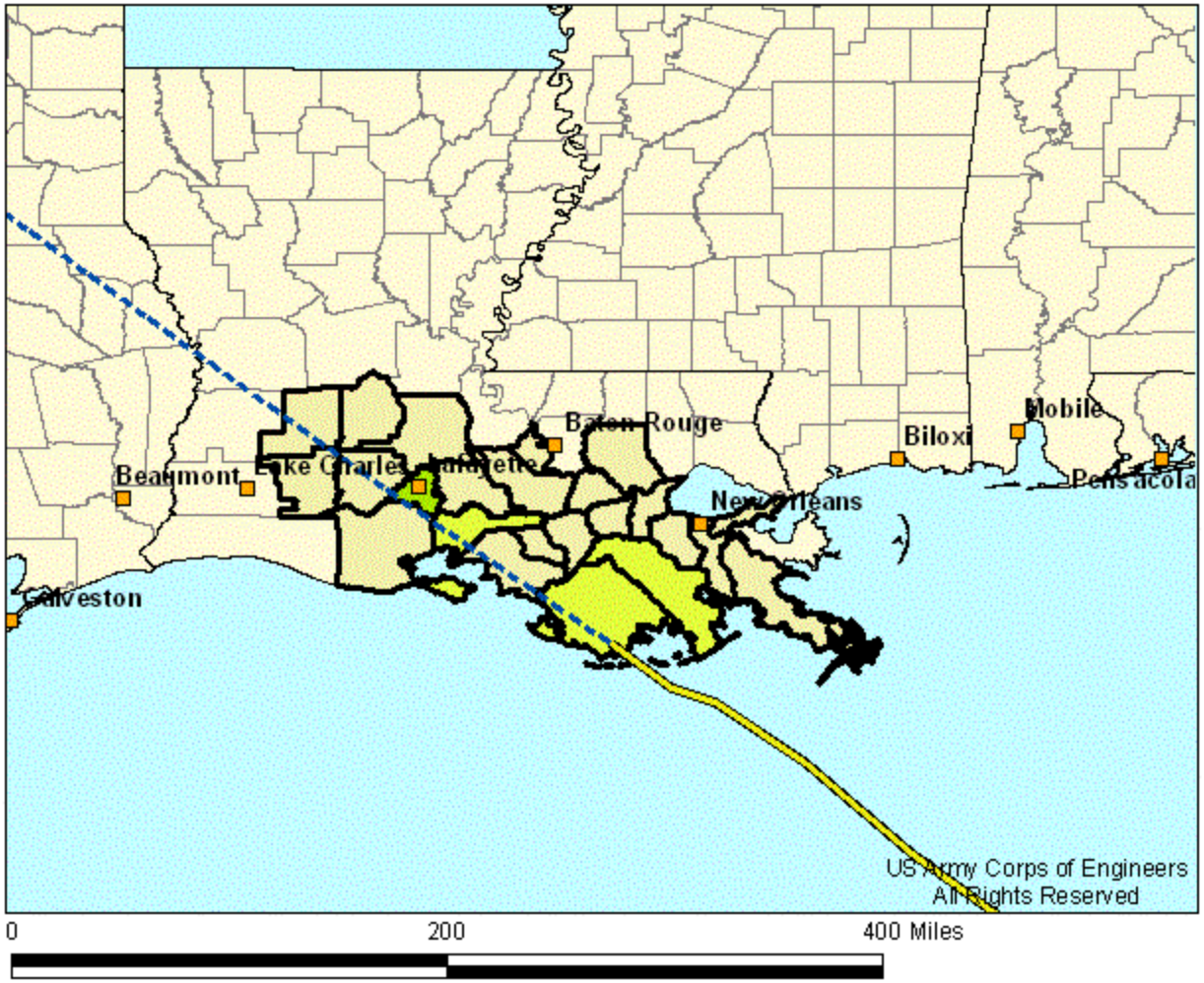
Sources:
HURREVAC
LRL-DEBRIS

Hurricane Gustav Temporary Roofing Model

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



Post Landfall Temporary Roofing Model Results

Louisiana - 23,600

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Forecast Track
Historic Track

Temporary Roofing

- < 2,000 units
- 2,000 - 3,999 units
- 4,000 - 5,999 units
- 6,000 - 9,999 units
- > 10,000 units

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast. Temporary roofing is based on 3% in CAT 1 and 8% in CAT 2.

Details about this model may be obtained at http://www.englinkusace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Gustav Roofing Model	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 6 of 20

US Army Corps of Engineers

Hurricane Gustav Temporary Roofing Model

Landfall Has Occurred

For Planning Purposes Only!

State	House Units per State	County	House Units per County
Louisiana		Acadia	900
		Allen	200
		Ascension	500
		Assumption	600
		Evangeline	< 100
		Iberia	2,100
		Iberville	300
		Jefferson	1,900
		Jefferson Davis	200
		Lafayette	4,800
		Lafourche	2,700
		Livingston	< 100
		Orleans	< 100
		Plaquemines	200
		St Charles	600
		St James	300
		St John the Baptist	500
		St Landry	800
		St Martin	1,100
		St Mary	1,500
		Terrebonne	3,000
		Vermilion	1,400
		West Baton Rouge	< 100
Louisiana	23,600		

Temporary roofing is based on 3% in CAT 1 and 8% in CAT 2.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Source: US Army Corps of Engineers, All Rights Reserved

Hurricane Gustav Roofing Model

Generated By:
Siemsen, LRL 1130 EDT 09/01/2008

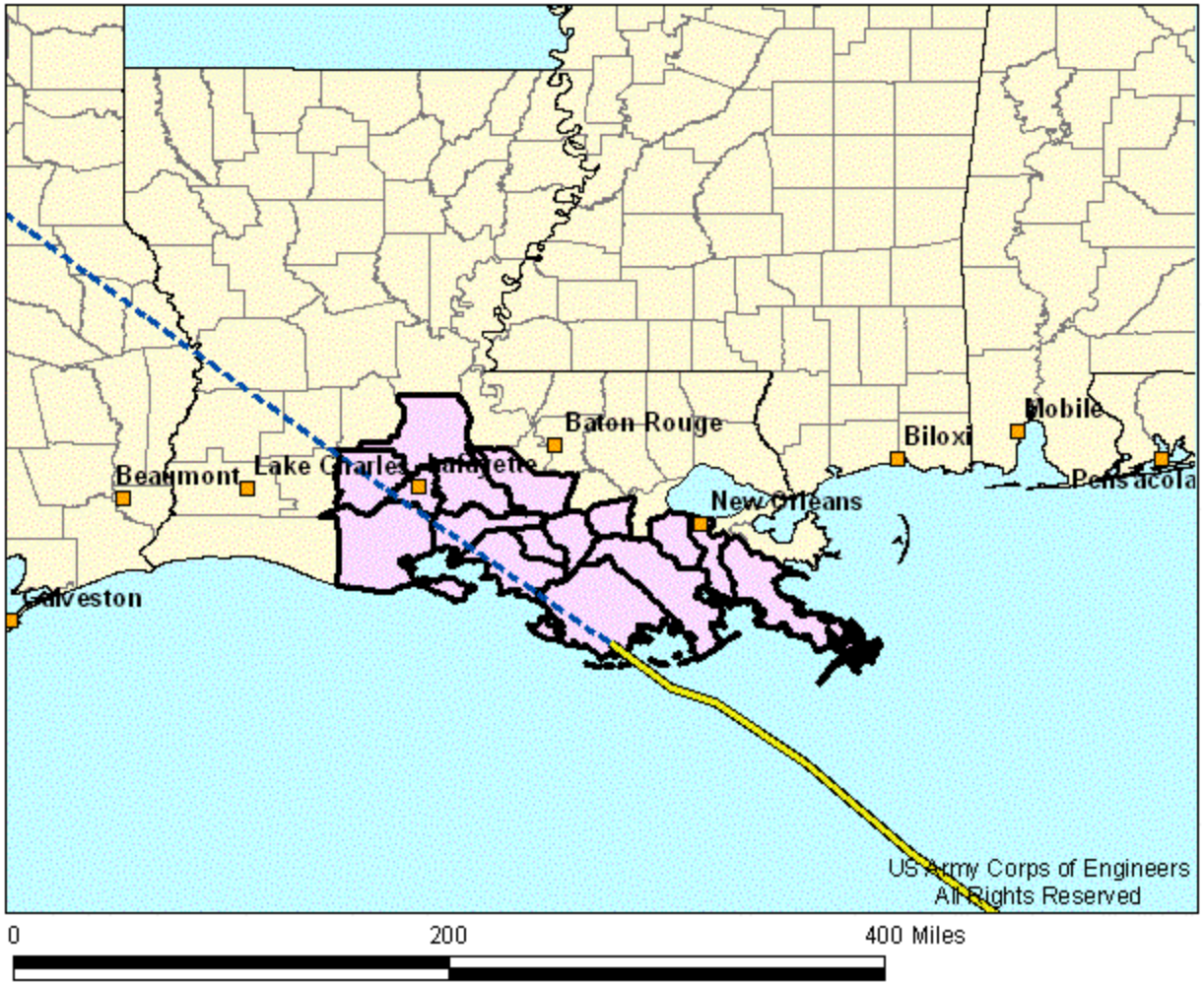
Sources:
HURREVAC
LRL-DEBRIS

Hurricane Gustav Temporary Housing Model

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



Post Landfall Temporary Housing Model Results

Louisiana - 2,200

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Forecast Track
Historic Track

Temporary Housing

- < 2,000 units
- 2,000 - 3,999 units
- 4,000 - 5,999 units
- 6,000 - 9,999 units
- > 10,000 units

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast. Temporary housing is based on 1% in CAT 2.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Gustav Housing Model	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 8 of 20

US Army Corps of Engineers

Hurricane Gustav Temporary Housing Model

Landfall Has Occurred

For Planning Purposes Only!

State	House Units per State	County	House Units per County
Louisiana		Acadia	< 100
		Assumption	< 100
		Iberia	300
		Iberville	< 100
		Jefferson	< 100
		Lafayette	700
		Lafourche	400
		Plaquemines	< 100
		St Charles	< 100
		St James	< 100
		St Landry	< 100
		St Martin	< 100
		St Mary	200
		Terrebonne	400
		Vermilion	200
Louisiana	2,200		

Temporary housing is based on 1% in CAT 2.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

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Hurricane Gustav Housing Model

Generated By:
Siemsen, LRL 1130 EDT 09/01/2008

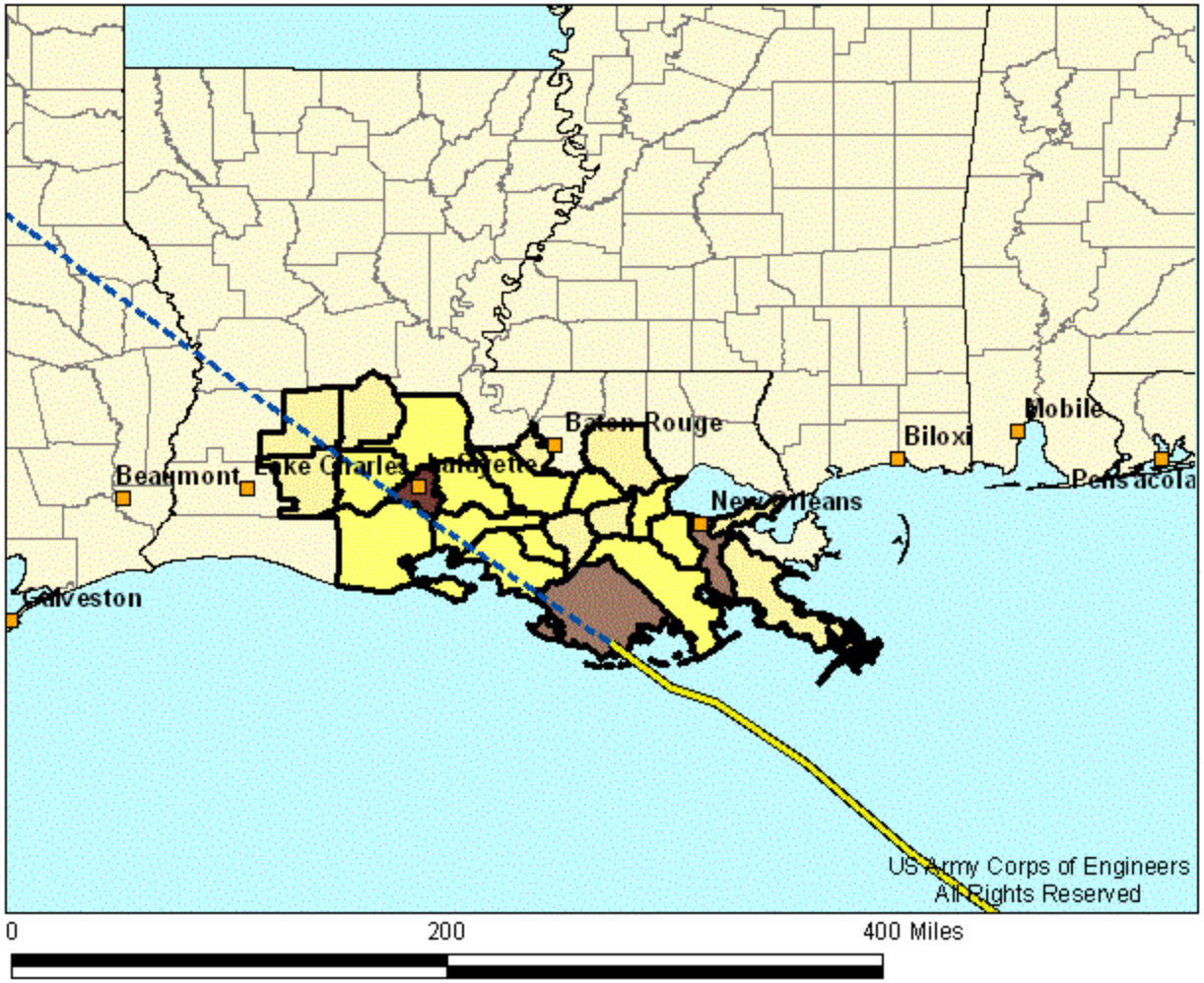
Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Gustav Population Model

Landfall Has Occurred

For Planning Purposes Only!



Post Landfall Population Model Results

Louisiana - 1,214,000

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Forecast Track
Historic Track

Population

- < 25,000 persons
- 25,000 - 99,999 persons
- 100,000 - 174,999 persons
- 175,000 - 249,999 persons
- > 250,000 persons

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast. The numbers of persons included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values adjusted to July 2007 values).

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Gustav Population Model	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 10 of 20

US Army Corps of Engineers

Hurricane Gustav Population Model

Landfall Has Occurred

For Planning Purposes Only!

State	Population per State	County	Population per County
Louisiana		Acadia	60,000
		Allen	11,000
		Ascension	44,000
		Assumption	23,000
		Evangeline	10,000
		Iberia	76,000
		Iberville	29,000
		Jefferson	169,000
		Jefferson Davis	16,000
		Lafayette	205,000
		Lafourche	93,000
		Livingston	< 1,000
		Orleans	3,000
		Plaquemines	17,000
		St Charles	51,000
		St James	22,000
		St John the Baptist	46,000
		St Landry	71,000
		St Martin	52,000
		St Mary	52,000
		Terrebonne	109,000
		Vermilion	53,000
		West Baton Rouge	2,000
Louisiana	1,214,000		

The number of persons estimated to be within the hurricane force winds comes from Census 2000 values adjusted to July 2007 values.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

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Hurricane Gustav Population Model

Generated By:
Siemsen, LRL 1130 EDT 09/01/2008

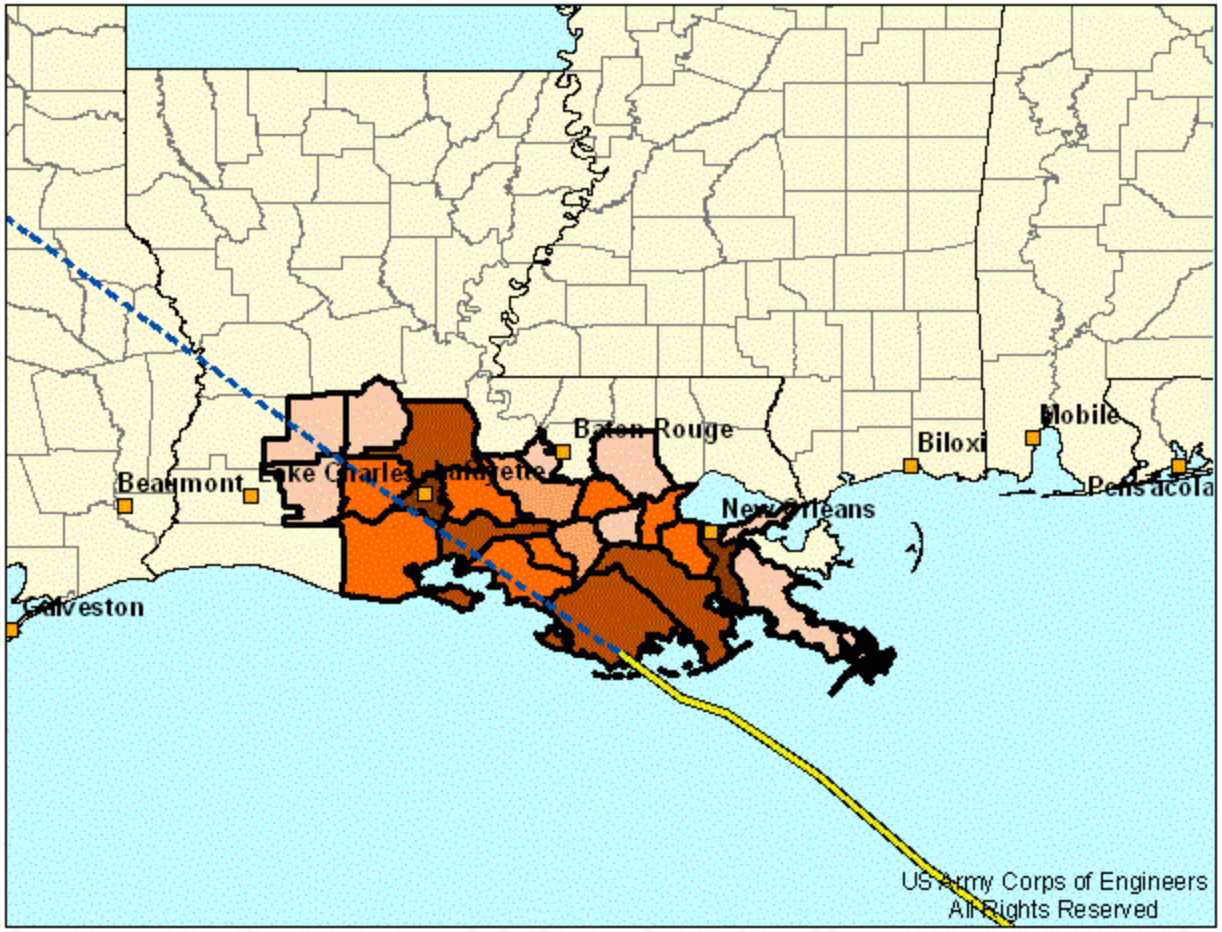
Sources:
HURREVAC
LRL-DEBRIS

Hurricane Gustav Households Model

Landfall Has Occurred

US Army Corps of Engineers

For Planning Purposes Only!



0 200 400 Miles

Post Landfall Households Model Results

Louisiana - 442,000

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Forecast Track
Historic Track

Households

- < 7,500 households
- 7,500 - 14,999 households
- 15,000 - 24,999 households
- 25,000 - 49,999 households
- > 50000 households

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast. The numbers of households included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values adjusted to July 2007 values).

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Gustav Households Model	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 12 of 20

US Army Corps of Engineers

Hurricane Gustav Households Model

Landfall Has Occurred

For Planning Purposes Only!

State	Households per State	County	Households per County
Louisiana		Acadia	22,000
		Allen	4,000
		Ascension	16,000
		Assumption	9,000
		Evangeline	4,000
		Iberia	27,000
		Iberville	10,000
		Jefferson	60,000
		Jefferson Davis	6,000
		Lafayette	78,000
		Lafourche	34,000
		Livingston	< 1,000
		Orleans	2,000
		Plaquemines	6,000
		St Charles	18,000
		St James	8,000
		St John the Baptist	16,000
		St Landry	26,000
		St Martin	19,000
		St Mary	19,000
		Terrebonne	38,000
		Vermilion	20,000
		West Baton Rouge	< 1,000
Louisiana	442,000		

The number of households estimated to be within the hurricane force winds comes from Census 2000 values adjusted to July 2007 values.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Source: US Army Corps of Engineers, All Rights Reserved

Hurricane Gustav Households Model

Generated By:
Siemsen, LRL 1130 EDT 09/01/2008

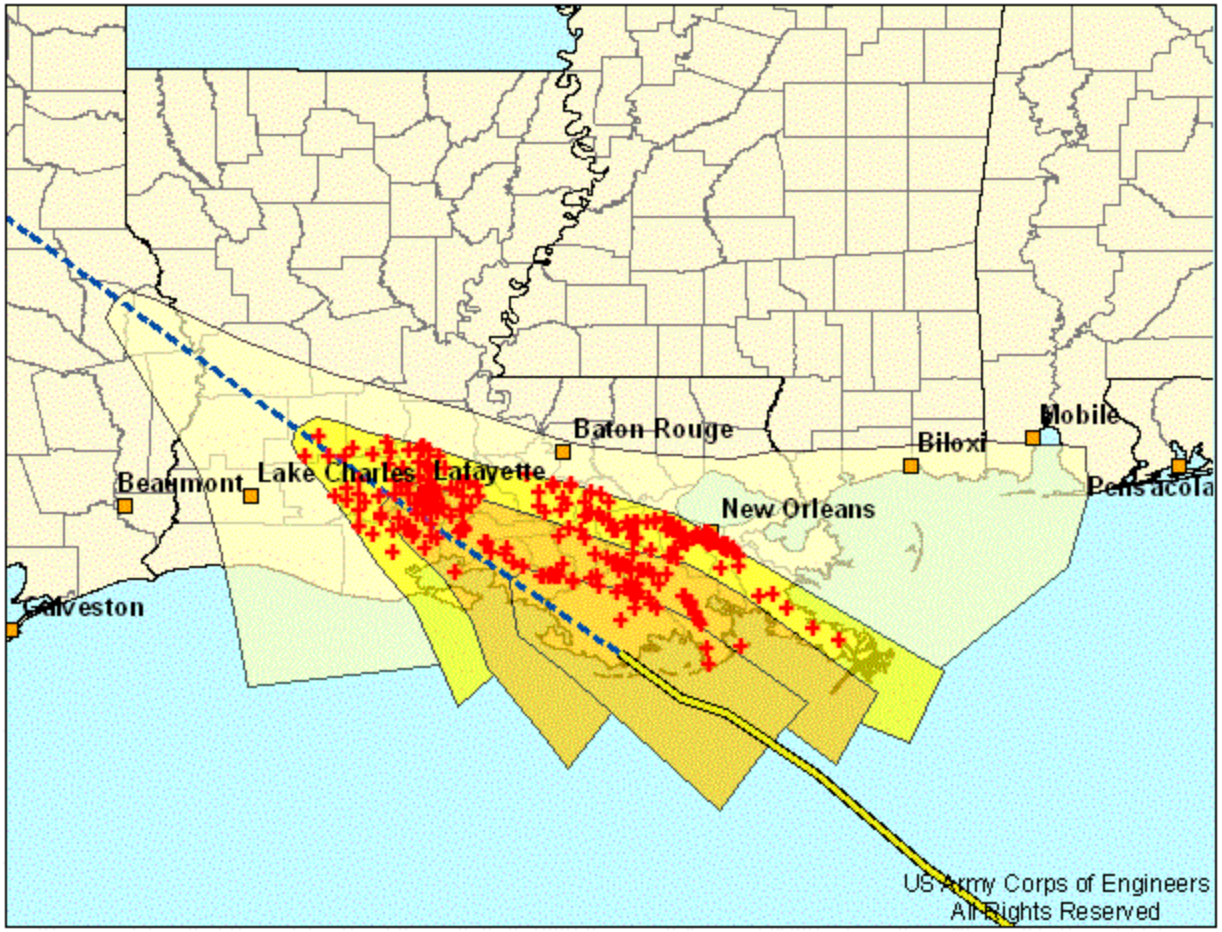
Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Gustav Fire Stations

Landfall Has Occurred

For Planning Purposes Only!



0 200 400 Miles

Most Probable Landfall Fire Stations Inside Hurricane Force Winds

Louisiana - 256

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Fire Stations
Forecast Track
Historic Track

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast.

The number of fire stations included in this output are those that would be included within estimated hurricane force winds (data source: Homeland Security Infrastructure Program).

Details about this model may be obtained at http://www.englinkusace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

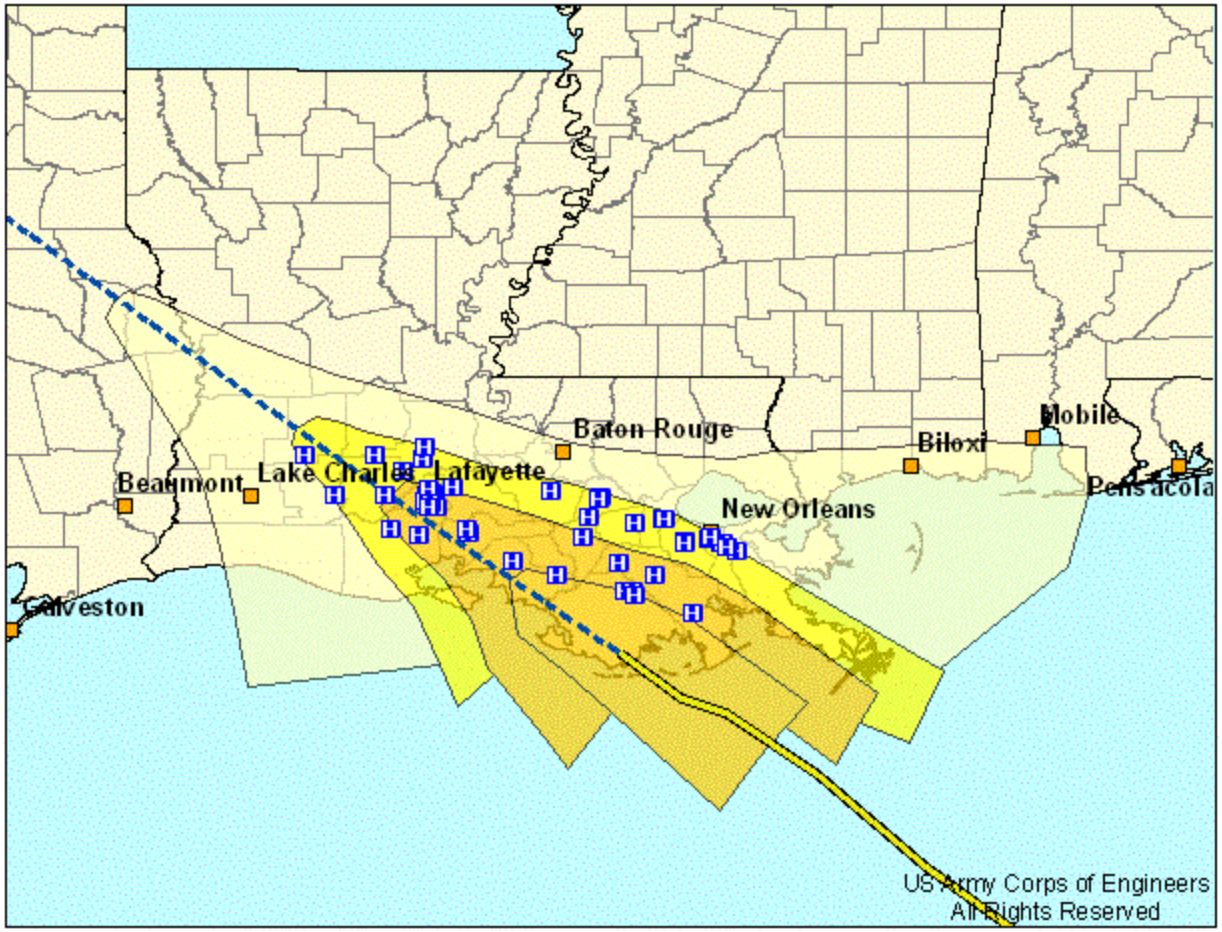
Hurricane Gustav Fire Stations	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 14 of 20

US Army Corps of Engineers

Hurricane Gustav Hospitals

Landfall Has Occurred

For Planning Purposes Only!



0 200 400 Miles

Most Probable Landfall Hospitals Inside Hurricane Force Winds

Louisiana - 49

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Hospitals
Forecast Track
Historic Track

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast.

The number of hospitals included in this output are those that would be included within estimated hurricane force winds (data source: Homeland Security Infrastructure Program).

Details about this model may be obtained at http://www.englinkusace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

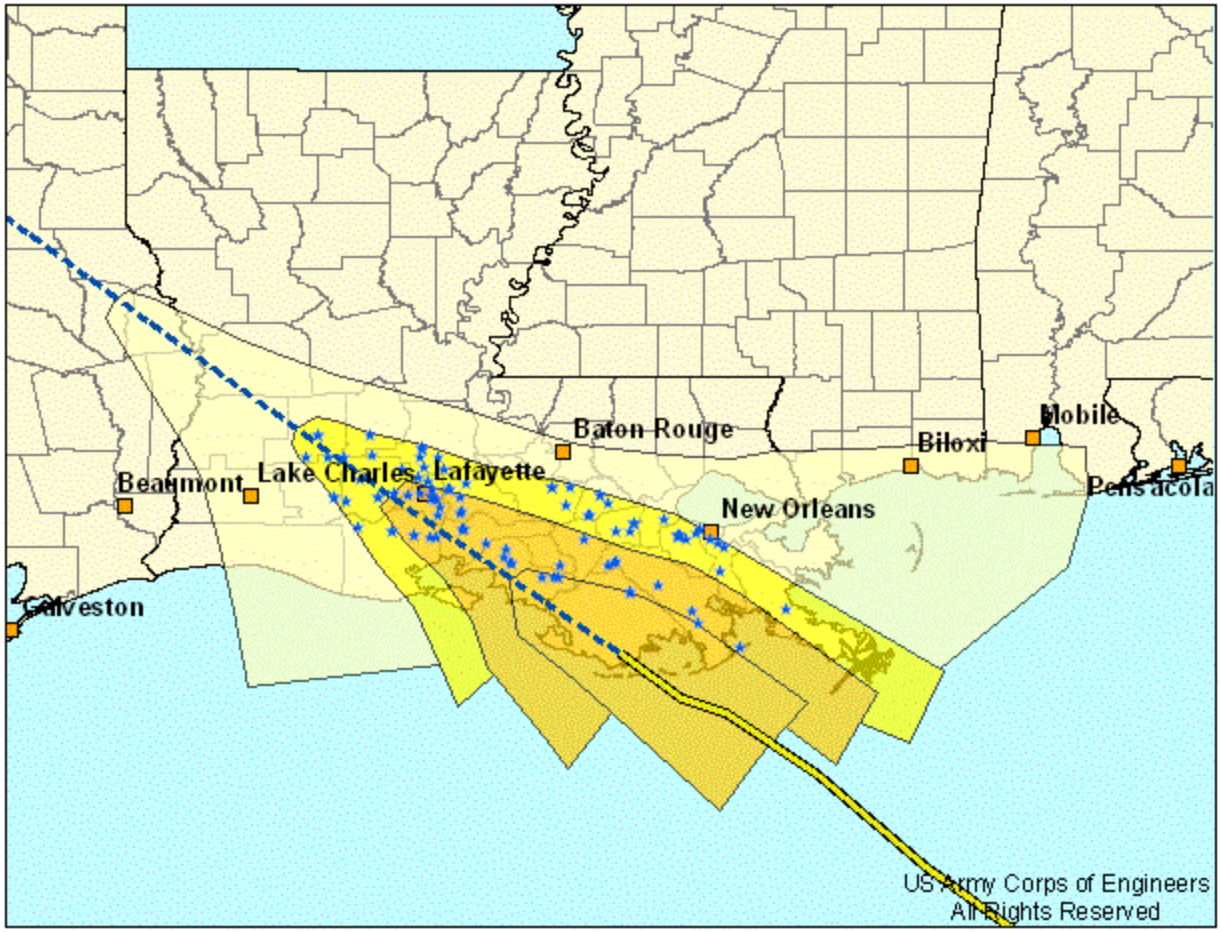
Hurricane Gustav Hospitals	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 15 of 20

US Army Corps of Engineers

Hurricane Gustav Law Enforcement

Landfall Has Occurred

For Planning Purposes Only!



0 200 400 Miles

Most Probable Landfall Law Enforcement Inside Hurricane Force Winds

Louisiana - 101

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Law Enforcement
Forecast Track
Historic Track

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast.

The number of law enforcement included in this output are those that would be included within estimated hurricane force winds (data source: Homeland Security Infrastructure Program).

Details about this model may be obtained at http://www.englinkusace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

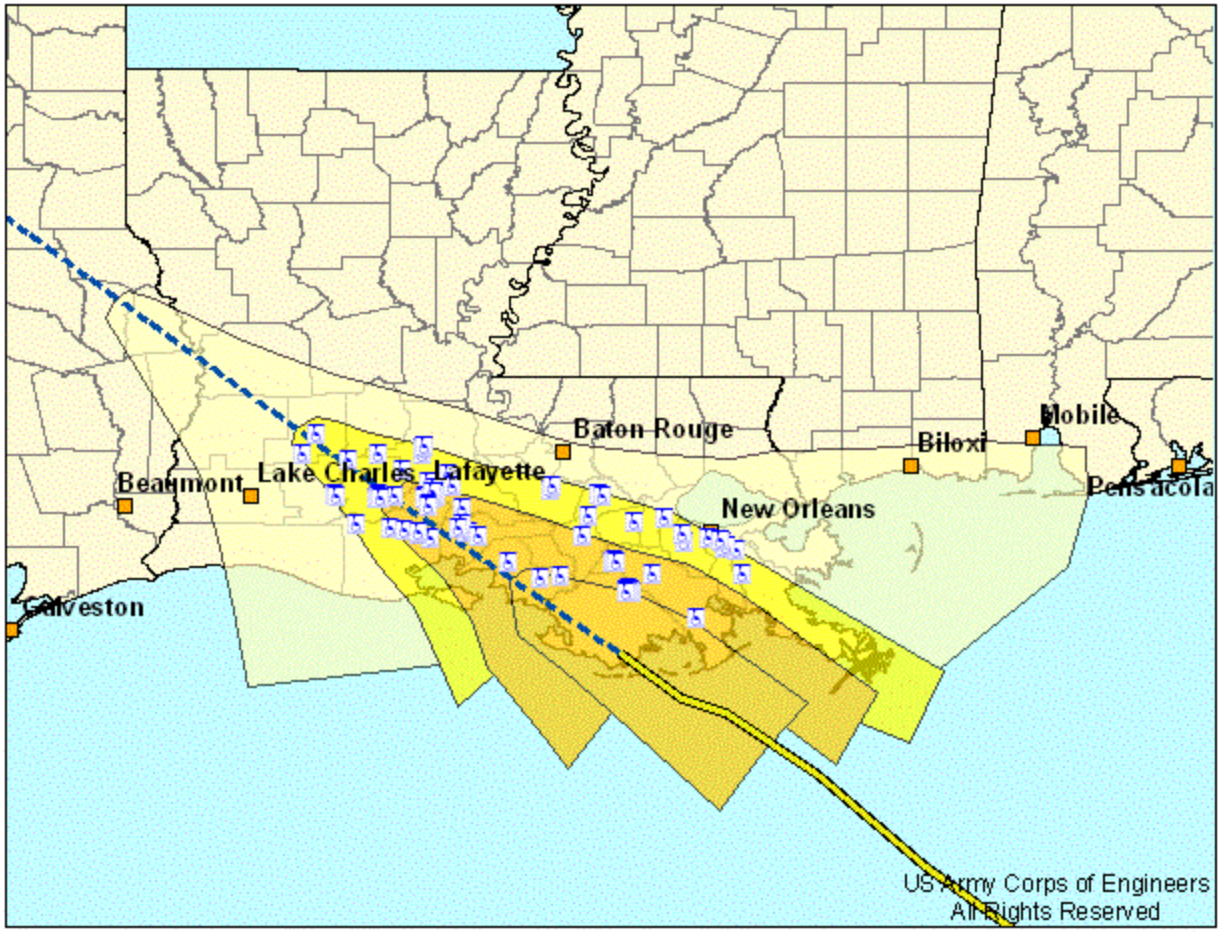
Hurricane Gustav Law Enforcement	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 16 of 20

US Army Corps of Engineers

Hurricane Gustav Nursing Homes

Landfall Has Occurred

For Planning Purposes Only!



0 200 400 Miles

Most Probable Landfall Nursing Homes Inside Hurricane Force Winds

Louisiana - 94

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Nursing Homes
Forecast Track
Historic Track

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast.

The number of nursing homes included in this output are those that would be included within estimated hurricane force winds (data source: Homeland Security Infrastructure Program).

Details about this model may be obtained at http://www.englinkusace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

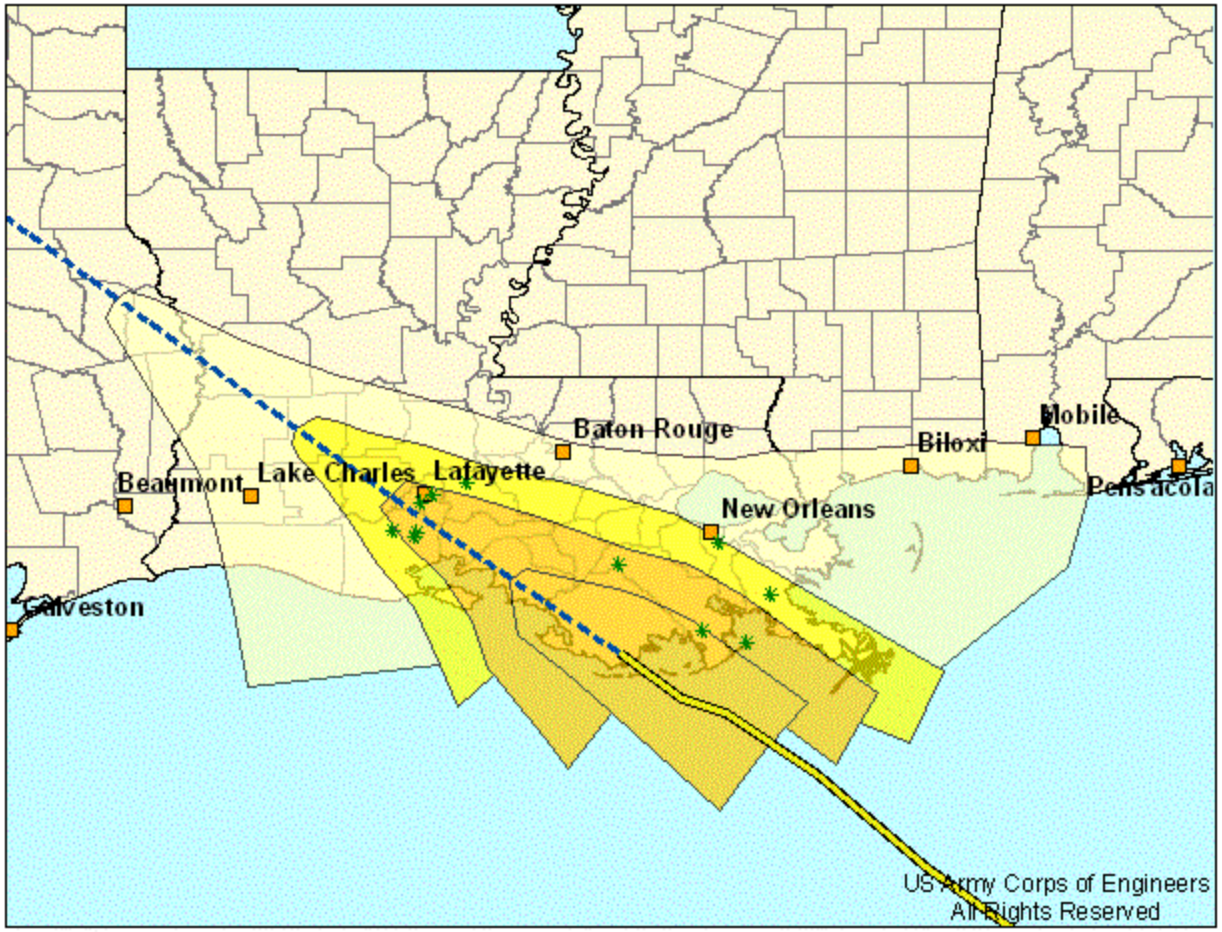
Hurricane Gustav Nursing Homes	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 17 of 20

US Army Corps of Engineers

Hurricane Gustav Potable Water

Landfall Has Occurred

For Planning Purposes Only!



0 200 400 Miles

Most Probable Landfall Potable Water Inside Hurricane Force Winds

Louisiana - 11

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

- Potable Water
- Forecast Track
- Historic Track

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast.

The number of potable water included in this output are those that would be included within estimated hurricane force winds (data source: Homeland Security Infrastructure Program).

Details about this model may be obtained at http://www.englinkusace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Gustav Potable Water	
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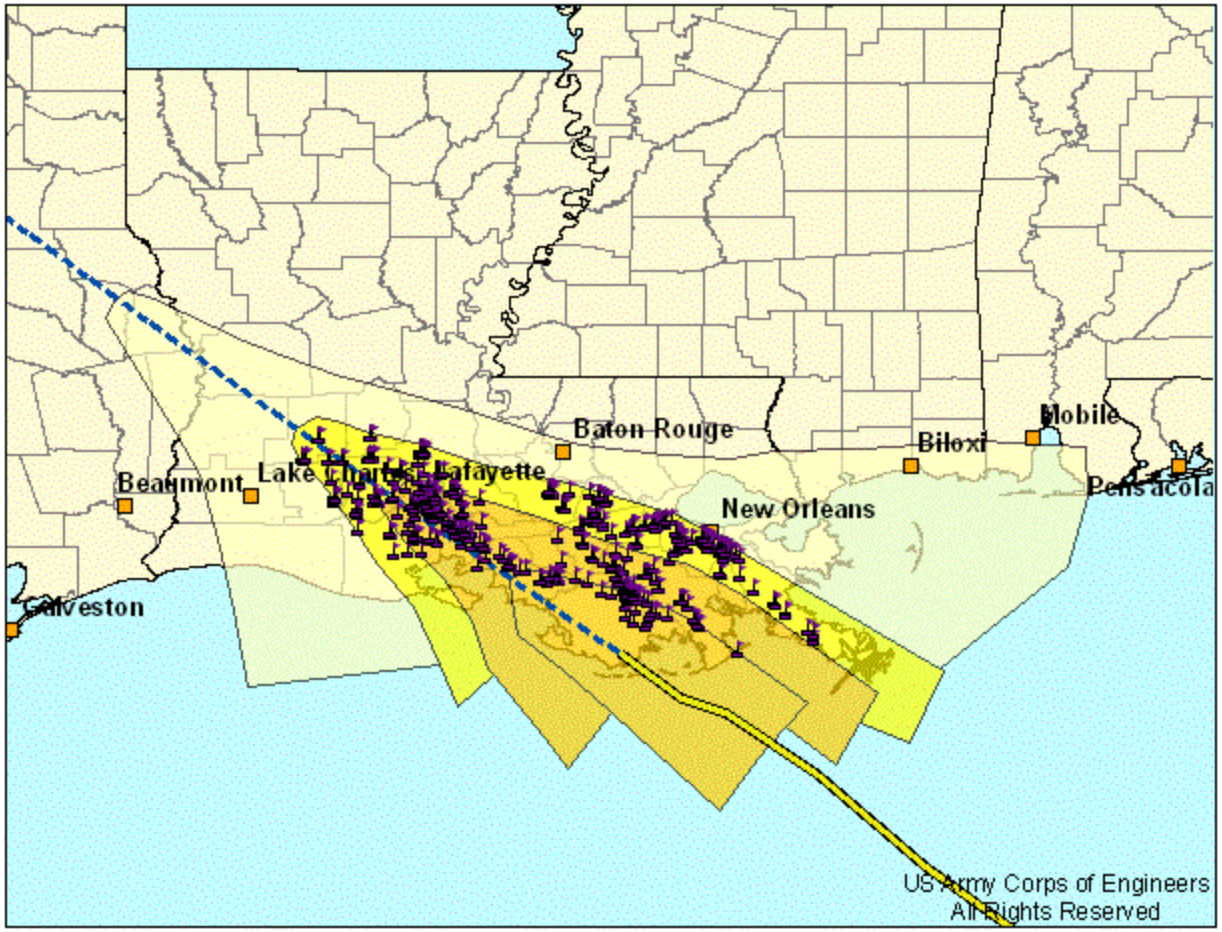
Sources: HURREVAC LRL-DEBRIS	Page 18 of 20

US Army Corps of Engineers

Hurricane Gustav Schools

Landfall Has Occurred

For Planning Purposes Only!



0 200 400 Miles

Most Probable Landfall Schools Inside Hurricane Force Winds

Louisiana - 562

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

Schools
Forecast Track
Historic Track

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast.

The number of schools included in this output are those that would be included within estimated hurricane force winds (data source: Homeland Security Infrastructure Program).

Details about this model may be obtained at http://www.englinkusace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

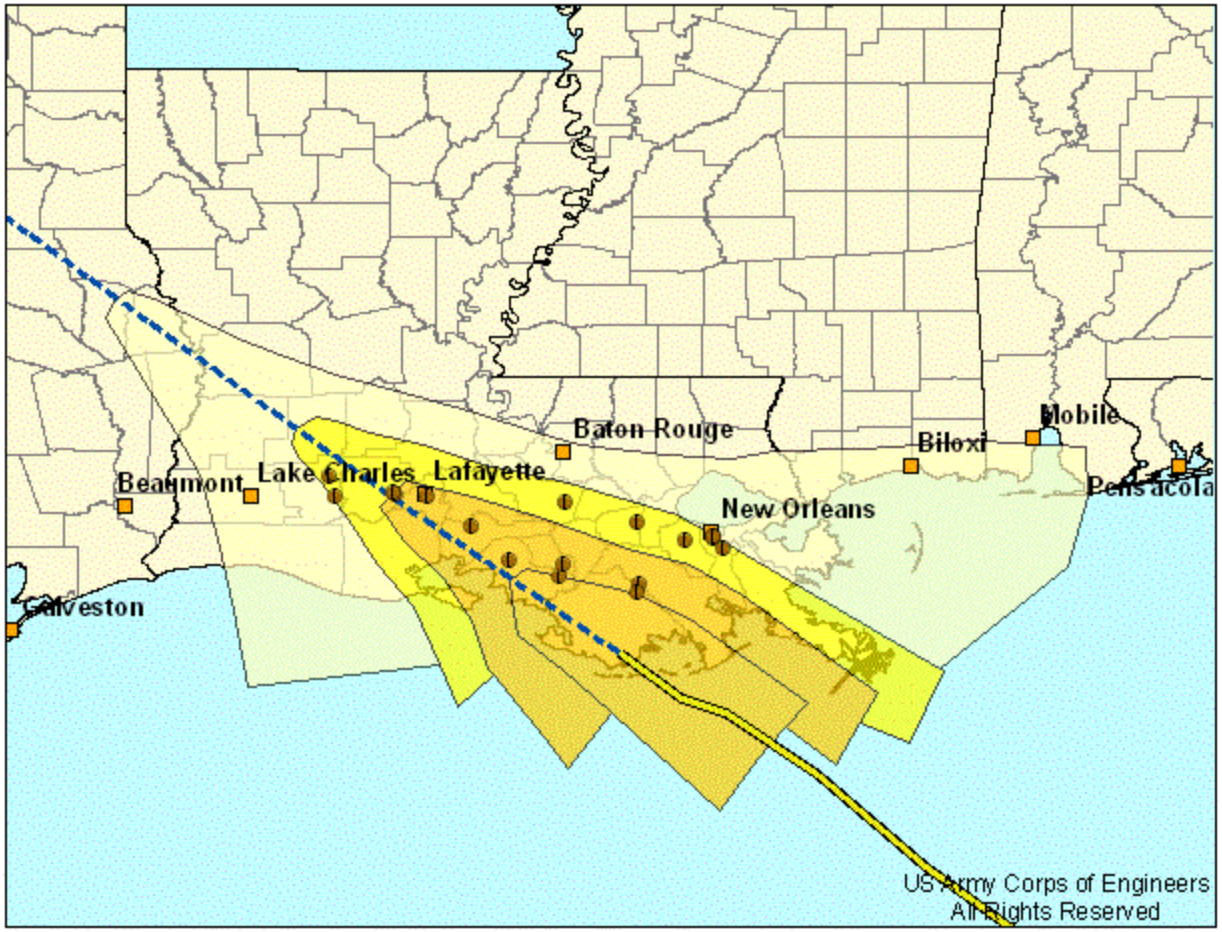
Hurricane Gustav Schools	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 19 of 20

Hurricane Gustav Sewage Treatment Plants

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



0 200 400 Miles

Most Probable Landfall Sewage Treatment Plants Inside Hurricane Force Winds

Louisiana - 18

Model results per County on following page

This model is based on a Category 2 storm making landfall south of Houma, LA.

- Sewage Treatment Plants
- Forecast Track
- Historic Track

Information provided on this page displays a Category 2 storm making landfall south of Houma, LA. These projections are based on information from the NHC (1100 EDT 09/01/2008) forecast.

The number of sewage treatment plants included in this output are those that would be included within estimated hurricane force winds (data source: Homeland Security Infrastructure Program).

Details about this model may be obtained at http://www.englinkusace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Gustav Sewage Treatment Plants	
Generated By: Siemsen, LRL 1130 EDT 09/01/2008	
Sources: HURREVAC LRL-DEBRIS	Page 20 of 20